

San Diego Bay Fish Consumption Study

Chad Loflen
SWAMP BOG
November 09, 2017



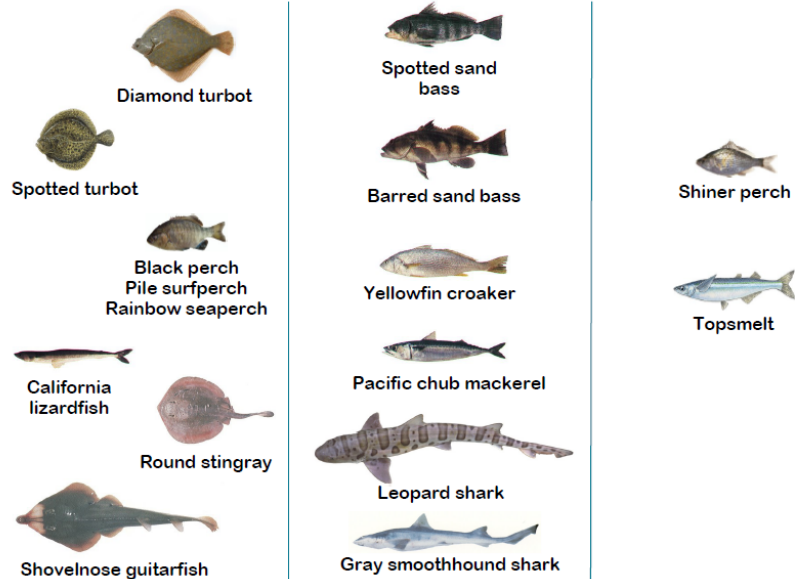
Background



Background

A Healthy Guide to Eating Fish from San Diego Bay

Women over 45 years and men can safely eat more fish



2 servings a week



1 serving a week

Do not eat

Eat only the skinless fillet.
PCBs are in the fat and skin of the fish.



- Remove and throw away the skin before cooking.
- Cook thoroughly and allow the juices to drain away.

What is a serving?



For Adults For Children

The recommended serving is the size and thickness of your hand. Give children smaller servings.

Why eat fish?

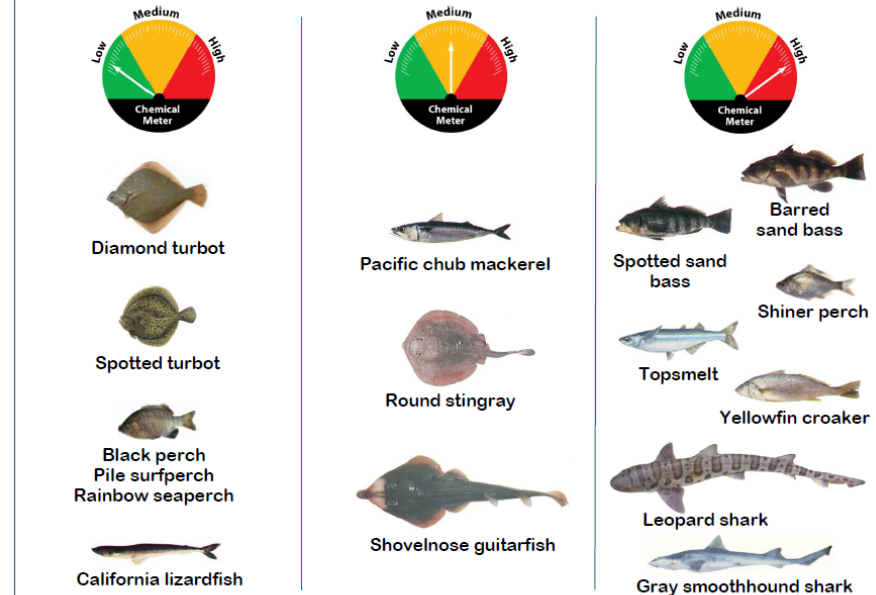
Eating fish is good for your health. Fish have Omega-3s that can reduce your risk for heart disease and improve how the brain develops in unborn babies and children.

What is the concern?

Some fish have high levels of mercury or PCBs. Mercury can harm the brain, especially in unborn babies and children. PCBs can cause cancer.

A Healthy Guide to Eating Fish from San Diego Bay

Women 18-45 years and children 1-17 years



2 servings a week



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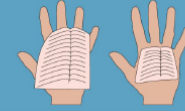
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- Last angler survey conducted in 1990
- NGO conducted a survey in 2005
- Consumption rates for cleanups?
- Disadvantaged communities?
- Methods of preparation?
- Target species?

Background

- Funding: Discretionary Contract with SCCWRP
- City of San Diego
- Port of San Diego

- Project Lead: Dr. Steven Steinberg (SCCWRP)
- Technical Advisory Group: CADFW, SD Water Board, Navy, City of San Diego, Port of San Diego, USPEA, State and County Public Health, Industry, NGO, Recreational Angler, UC Davis, State Water Board

Targeted Pier, Shore, and Boat Anglers



26 Question Survey

- Consumption Rates
- Preparation Methods
- Species Consumed
- Zip Code
- Sharing of Catch
- Self-reported Ethnicity

Results

Approached Anglers			Complete Surveys*			
Type of Angler	Count	%	Type of Angler	Count	%	% Completed
Pier Angler	952	61	Pier Angler	706	65	74
Boat Angler	367	24	Boat Angler	175	16	48
Shoreline Angler	230	15	Shoreline Angler	205	19	89
Total	1549	100	Total	1086	100	70

Surveys conducted from May 01, 2015 through April 30, 2016

Multi-variate sampling schedule used

Of those approached, 81 percent were first-time interviews

Results

Table 5. Breakdown of where anglers identified they lived by county (if in California) or state (outside of California).

County	Count	Percent	State	Count	Percent
Within California			Other States		
San-Diego County	1093	70.6	Arizona	10	0.6
Riverside County	21	1.4	Colorado	2	0.1
Los Angeles County	11	0.7	Nevada	2	0.1
Orange County	8	0.5	New Mexico	1	0.1
San Bernardino County	7	0.5	Texas	1	0.1
Monterey County	5	0.3	Utah	1	0.1
Kern County	1	0.1	Oregon	1	0.1
Alameda County	1	0.1	Total Out of State	18	1.2
Placer County	1	0.1			
Yolo County	1	0.1	Unknown	380	24.5
Sacramento County	1	0.1			
San Mateo County	1	0.1	Overall Total	1549	100.0
Total Within State	1151	74.3			

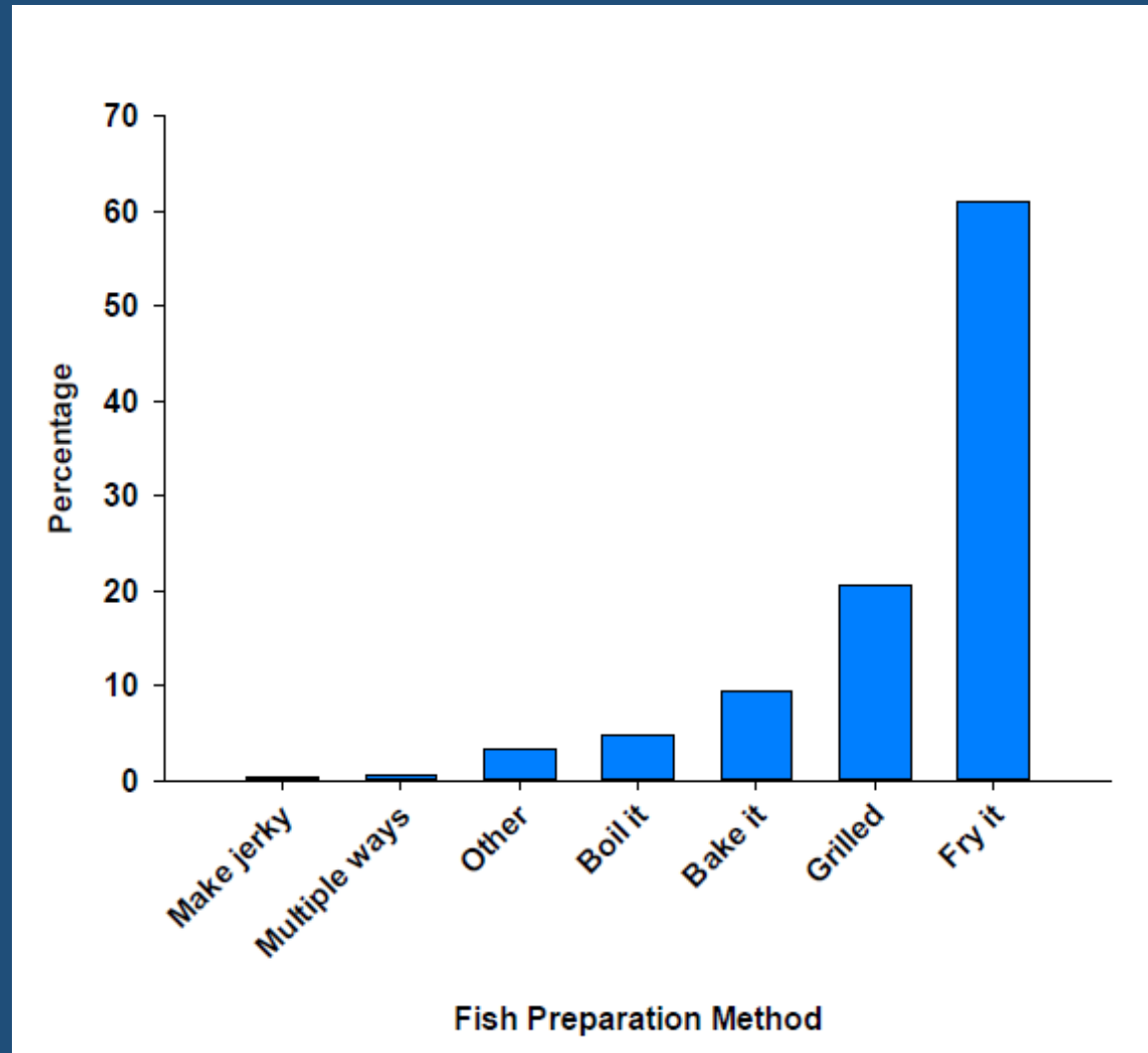
Results

Statistic	Local Anglers (San Diego Bay)	Asians	Older Than 60 years
Mean (Standard Deviation)	6.3 (18.14)	19.9 (39.40)	12.0 (28.67)
Minimum Value	0.0	0.0	0.0
Maximum Value	212.6	212.6	212.6
Geometric Mean	1.5	5.5	3.2
Median (50th Percentile)	0.0	8.5	4.3
75th Percentile	5.7	20.6	10.6
90th Percentile	14.2	56.7	29.1
95th Percentile	28.3	76.8	42.5
99th Percentile	73.7	212.6	124.6
N*	468	67	70

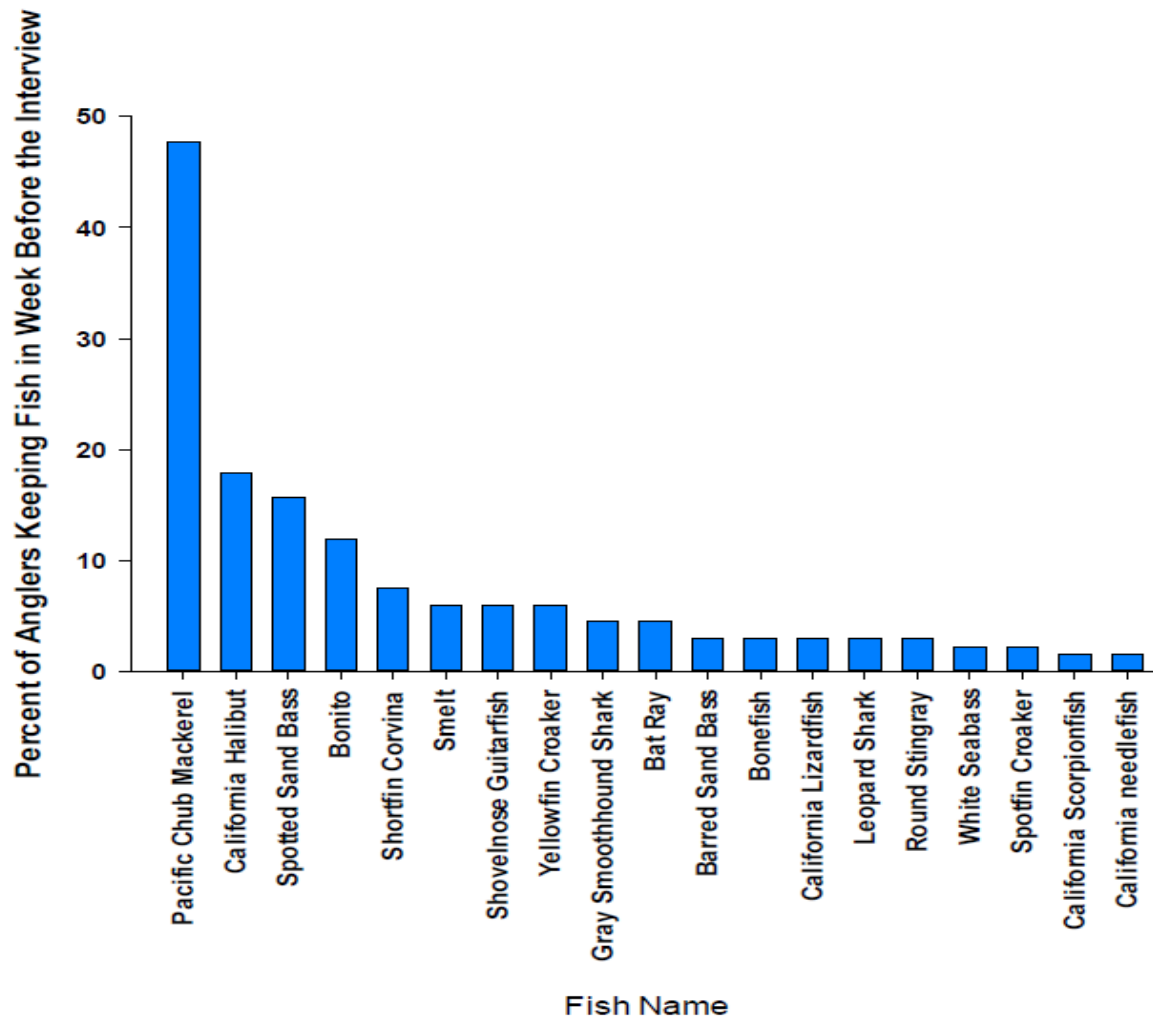
8 ounce weekly serving = 32.4 grams/day

- 49% Eat Bay Fish
- 67% Consume Fillets
- 33% Consume Whole
- Consumption Rates:
 - 0.0 to 200+ grams/day

Results



Results



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Diamond turbot	Spotted sand bass	
Spotted turbot	Barred sand bass	
Black perch	Yellowfin croaker	
Pile surfperch	Pacific chub mackerel	
Rainbow seaperch	Shiner perch	
California lizardfish	Topsmelt	
Round stingray	Leopard shark	
Shovelnose guitarfish	Gray smoothhound shark	

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California Office of Environmental Health Hazard Assessment • www.oehha.ca.gov/fish.html • (916) 327-7319 or (510) 622-3170

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18-45 years and children 1-17 years

Pacific chub mackerel	Barred sand bass
Spotted sand bass	Shiner perch
Topsmelt	Yellowfin croaker
Round stingray	Leopard shark
Shovelnose guitarfish	Gray smoothhound shark

1 serving a week OR Do not eat

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Health Hazard Assessment • www.oehha.ca.gov/fish.html • (916) 327-7319 or (510) 622-3170

Summary

- Varied Rates of Consumption
- Whole Fish Consumed, Most Fish Fried
- Certain Species Targeted
- Many Anglers at High Risk

